

Environmental Protection Agency

§ 82.158

§ 82.158 Standards for recycling and recovery equipment.

(a) Effective September 22, 2003, all manufacturers and importers of recycling and recovery equipment intended for use during the maintenance, service, or repair of appliances except MVACs and MVAC-like appliances or during the disposal of appliances except small appliances, MVACs, and MVAC-like appliances, shall have had such equipment certified by an approved equipment testing organization to meet the applicable requirements in paragraph (b)(1), (b)(2), or (d) of this section. All manufacturers and importers of recycling and recovery equipment intended for use during the maintenance, service, or repair of MVAC-like appliances shall have had such equipment certified pursuant to § 82.36(a).

(b) Equipment manufactured or imported on or after November 15, 1993 and before September 22, 2003, for use during the maintenance, service, or repair of appliances except small appliances, MVACs, and MVAC-like appliances or during the disposal of appliances except small appliances, MVACs, and MVAC-like appliances must be certified by an approved equipment testing organization to meet the requirements of paragraph (b)(1) of this section and the following requirements below. Equipment manufactured or imported on or after September 22, 2003, for use during the maintenance, service, or repair of appliances except small appliances, MVACs, and MVAC-like appliances or during the disposal of appliances except small appliances, MVACs, and MVAC-like appliances must be certified by an approved equipment testing organization to meet the requirements of paragraph (b)(2) of this section and the following requirements.

(1) In order to be certified, the equipment must be capable of achieving the level of evacuation specified in Table 2 of this section under the conditions of appendix B1 of this subpart (based upon the ARI Standard 740-1993, Performance of Refrigerant Recovery, Recycling and/or Reclaim Equipment):

TABLE 2—LEVELS OF EVACUATION WHICH MUST BE ACHIEVED BY RECOVERY OR RECYCLING EQUIPMENT INTENDED FOR USE WITH APPLIANCES¹

[Manufactured on or after November 15, 1993]

Type of appliance with which recovery or recycling machine is intended to be used	Inches of Hg vacuum
HCFC-22 appliances, or isolated component of such appliances, normally containing less than 200 pounds of refrigerant	0
HCFC-22 appliances, or isolated component of such appliances, normally containing 200 pounds or more of refrigerant	10
Very high-pressure appliances	0
Other high-pressure appliances, or isolated component of such appliances, normally containing less than 200 pounds of refrigerant	10
Other high-pressure appliances, or isolated component of such appliances, normally containing 200 pounds or more of refrigerant	15
Low-pressure appliances	² 25

¹ Except for small appliances, MVACs, and MVAC-like appliances.

² mm Hg absolute.

The vacuums specified in inches of Hg vacuum must be achieved relative to an atmospheric pressure of 29.9 inches of Hg absolute.

(2) In order to be certified, the equipment must be capable of achieving the level of evacuation specified in Table 2 of paragraph (b)(1) of this section under the conditions of appendix B2 of this subpart (based upon the ARI Standard 740-1995, Performance of Refrigerant Recovery, Recycling and/or Reclaim Equipment).

(3) Recovery or recycling equipment whose recovery efficiency cannot be tested according to the procedures in appendix B1 or B2 of this subpart as applicable may be certified if an approved third-party testing organization adopts and performs a test that demonstrates, to the satisfaction of the Administrator, that the recovery efficiency of that equipment is equal to or better than that of equipment that:

(i) Is intended for use with the same type of appliance; and

(ii) Achieves the level of evacuation in Table 2. The manufacturer's instructions must specify how to achieve the required recovery efficiency, and the equipment must be tested when used according to these instructions.

(4) The equipment must meet the minimum requirements for certification under appendix B1 or B2 of this subpart as applicable.

(5) If the equipment is equipped with a noncondensables purge device, the equipment must not release more than three (3) percent of the quantity of refrigerant being recycled through noncondensables purging under the conditions of appendix B1 and B2 of this subpart as applicable.

(6) The equipment must be equipped with low-loss fittings on all hoses.

(7) The equipment must have its liquid recovery rate and its vapor recovery rate measured under the conditions of appendix B1 or B2 as applicable, unless the equipment has no inherent liquid or vapor recovery rate.

(c) Equipment manufactured or imported before November 15, 1993 for use during the maintenance, service, or repair of appliances except small appliances, MVACs, and MVAC-like appliances or during the disposal of appliances except small appliances, MVACs, and MVAC-like appliances will be considered certified if it is capable of achieving the level of evacuation specified in Table 3 of this section when tested using a properly calibrated pressure gauge:

TABLE 3—LEVELS OF EVACUATION WHICH MUST BE ACHIEVED BY RECOVERY OR RECYCLING MACHINES INTENDED FOR USE WITH APPLIANCES¹

[Manufactured before November 15, 1993]

Type of air-conditioning or refrigeration equipment with which recovery or recycling machine is intended to be used	Inches of vacuum (relative to standard atmospheric pressure of 29.9 inches Hg)
HCFC-22 equipment, or isolated component of such equipment, normally containing less than 200 pounds of refrigerant	0
HCFC-22 equipment, or isolated component of such equipment, normally containing 200 pounds or more of refrigerant	4
Very high-pressure equipment	0
Other high-pressure equipment, or isolated component of such equipment, normally containing less than 200 pounds of refrigerant	4
Other high-pressure equipment, or isolated component of such equipment, normally containing 200 pounds or more of refrigerant	4
Low-pressure equipment	25

¹Except for small appliances, MVACs, and MVAC-like appliances.

(d) Equipment manufactured or imported on or after November 15, 1993 and before September 22, 2003, for use

during the maintenance, service, or repair of small appliances must be certified by an approved equipment testing organization to be capable of achieving the requirements described in either paragraph (d)(1) or (d)(2) of this section. Equipment manufactured or imported on or after September 22, 2003, for use during the maintenance, service, or repair of small appliances must be certified by an approved equipment testing organization to be capable of either paragraph (d)(1) or (d)(3) of this section:

(1) Recovering 90% of the refrigerant in the test stand when the compressor of the test stand is operating and 80% of the refrigerant when the compressor of the test stand is not operating when used in accordance with the manufacturer's instructions under the conditions of appendix C, Method for Testing Recovery Devices for Use with Small Appliances; or

(2) Achieving a four-inch vacuum under the conditions of appendix B1 of this subpart, based upon ARI Standard 740–1993; or

(3) Achieving a four-inch vacuum under the conditions of appendix B2 of this subpart, based upon ARI Standard 740–1995.

(e) Equipment manufactured or imported before November 15, 1993 for use with small appliances will be considered certified if it is capable of either:

(1) Recovering 80% of the refrigerant in the system, whether or not the compressor of the test stand is operating, when used in accordance with the manufacturer's instructions under the conditions of appendix C, Method for Testing Recovery Devices for Use with Small Appliances; or

(2) Achieving a four-inch vacuum when tested using a properly calibrated pressure gauge.

(f) Equipment manufactured or imported on or after November 15, 1993 for use during the maintenance, service, or repair of MVAC-like appliances must be certified in accordance with § 82.36(a).

(g) Equipment manufactured or imported before November 15, 1993 for use during the maintenance, service, or repair of MVAC-like appliances must be capable of reducing the system pressure to 102 mm of mercury vacuum

under the conditions of the SAE Standard, SAE J1990 (appendix A to 40 CFR part 82, subpart B).

(h) Manufacturers and importers of equipment certified under paragraphs (b) and (d) of this section must place a label on each piece of equipment stating the following:

THIS EQUIPMENT HAS BEEN CERTIFIED BY [APPROVED EQUIPMENT TESTING ORGANIZATION] TO MEET EPA'S MINIMUM REQUIREMENTS FOR RECYCLING OR RECOVERY EQUIPMENT INTENDED FOR USE WITH [APPROPRIATE CATEGORY OF APPLIANCE].

The label shall also show the date of manufacture and the serial number (if applicable) of the equipment. The label shall be affixed in a readily visible or accessible location, be made of a material expected to last the lifetime of the equipment, present required information in a manner so that it is likely to remain legible for the lifetime of the equipment, and be affixed in such a manner that it cannot be removed from the equipment without damage to the label.

(i) The Administrator will maintain a list of equipment certified pursuant to paragraphs (b), (d), and (f) of this section by manufacturer and model. Persons interested in obtaining a copy of the list should send written inquiries to the address in § 82.160(a).

(j) Manufacturers or importers of recycling or recovery equipment intended for use during the maintenance, service, or repair of appliances except MVACs or MVAC-like appliances or during the disposal of appliances except small appliances, MVACs, and MVAC-like appliances must periodically have approved equipment testing organizations conduct either:

(1) Retests of certified recycling or recovery equipment in accordance with paragraph (a) of this section or

(2) Inspections of recycling or recovery equipment at manufacturing facilities to ensure that each equipment

model line that has been certified under this section continues to meet the certification criteria.

Such retests or inspections must be conducted at least once every three years after the equipment is first certified.

(k) An equipment model line that has been certified under this section may have its certification revoked if it is subsequently determined to fail to meet the certification criteria. In such cases, the Administrator or her or his designated representative shall give notice to the manufacturer or importer setting forth the basis for her or his determination.

(l) Equipment used to evacuate refrigerant from MVACs and MVAC-like appliances before they are disposed of must be certified in accordance with § 82.36(a).

(m) Equipment used to evacuate refrigerant from small appliances before they are disposed of must be capable of either:

(1) Removing 90% of the refrigerant when the compressor of the small appliance is operating and 80% of the refrigerant when the compressor of the small appliance is not operating, when used in accordance with the manufacturer's instructions under the conditions of appendix C, Method for Testing Recovery Devices for Use With Small Appliances; or

(2) Evacuating the small appliance to four inches of vacuum when tested using a properly calibrated pressure gauge.

(n) Effective October 22, 2003, equipment that is advertised or marketed as "recycling equipment" must be capable of recycling the standard contaminated refrigerant sample of appendix B2 of this subpart (based upon ARI Standard 740-1995), section 5, to the levels in the following table when tested under the conditions of appendix B2 of this subpart:

MAXIMUM LEVELS OF CONTAMINANTS PERMISSIBLE IN REFRIGERANT PROCESSED THROUGH EQUIPMENT ADVERTISED AS "RECYCLING" EQUIPMENT

Contaminants	Low-pressure (R-11, R-123, R-113) systems	R-12 systems	All other systems
Acid Content (by wt.)	1.0 PPM	1.0 PPM	1.0 PPM.
Moisture (by wt.)	20 PPM	10 PPM	20 PPM.
Noncondensable Gas (by vol.)	N/A	2.0%	2.0%.

MAXIMUM LEVELS OF CONTAMINANTS PERMISSIBLE IN REFRIGERANT PROCESSED THROUGH
EQUIPMENT ADVERTISED AS “RECYCLING” EQUIPMENT—Continued

Contaminants	Low-pressure (R–11, R–123, R–113) systems	R–12 systems	All other systems
High Boiling Residues (by vol.)	1.0%	0.02%	0.02%.
Chlorides by Silver Nitrate Test	No turbidity	No turbidity	No turbidity.
Particulates	Visually clean	Visually clean	Visually clean.

[58 FR 28712, May 14, 1993, as amended at 59 FR 42957, Aug. 19, 1994; 68 FR 43807, July 24, 2003; 73 FR 34649, June 18, 2008]

§ 82.160 Approved equipment testing organizations.

(a) Any equipment testing organization may apply for approval by the Administrator to certify equipment pursuant to the standards in § 82.158 and appendices B2 or C of this subpart. The application shall be mailed to: Section 608 Recycling Program Manager; Global Programs Division; Mail Code: 6205J; U.S. Environmental Protection Agency; 1200 Pennsylvania Avenue, NW.; Washington, DC 20460.

(b) Applications for approval must include written information verifying the following:

(1) The list of equipment present at the organization that will be used for equipment testing.

(2) Expertise in equipment testing and the technical experience of the organization's personnel.

(3) Thorough knowledge of the standards and recordkeeping and reporting requirements as they appear in §§ 82.158 and 82.166 and Appendices B2 and/or C (as applicable) of this subpart.

(4) The organization must describe its program for verifying the performance of certified recycling and recovery equipment manufactured over the long term, specifying whether retests of equipment or inspections of equipment at manufacturing facilities will be used.

(5) The organization must have no conflict of interest and receive no direct or indirect financial benefit from the outcome of certification testing.

(6) The organization must agree to allow the Administrator access to records and personnel to verify the information contained in the application.

(c) Organizations may not certify equipment prior to receiving approval from EPA. If approval is denied under

this section, the Administrator or her or his designated representative shall give written notice to the organization setting forth the basis for her or his determination.

(d) If at any time an approved testing organization is found to be conducting certification tests for the purposes of this subpart in a manner not consistent with the representations made in its application for approval under this section, the Administrator reserves the right to revoke approval in accordance with § 82.169. In such cases, the Administrator or her or his designated representative shall give notice to the organization setting forth the basis for her or his determination.

[58 FR 28712, May 14, 1993, as amended at 59 FR 42962, Aug. 19, 1994; 68 FR 43808, July 24, 2003]

§ 82.161 Technician certification.

(a) Effective November 14, 1994, technicians, except technicians who successfully completed voluntary certification programs that apply for approval under § 82.161(g) by December 9, 1994, must be certified by an approved technician certification program under the requirements of this paragraph (a). Effective May 15, 1995, all technicians must be certified by an approved technician certification program under the requirements of this paragraph (a).

(1) Technicians, as defined in § 82.152, who maintain, service, or repair small appliances must be properly certified as Type I technicians.

(2) Technicians who maintain, service, or repair medium-, high-, or very high-pressure appliances, except small appliances, MVACs, and MVAC-like appliances, or dispose of medium-, high-, or very high-pressure appliances, except small appliances, MVACs, and